

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No. : 09/966,413
Applicant : George G. Pappas
Filed : 09/28/2001
Tech. Center/Art Unit : 3749
Examiner : Josiah C. Cocks

Attorney File No. : LUM 180
Customer No. : 002555
Confirmation Number : 4358
For : Flame-Resistant Sheet With Candle Wick Support

APPLICANT'S BRIEF ON APPEAL

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(1) REAL PARTY IN INTEREST

Lumi-Lite Candle Co., Inc., assignee of the inventor, George G. Pappas.

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

(3) STATUS OF CLAIMS

Claims 1-23 were filed in the application. Claims 24 and 25 were added. Applicant canceled claims 2, 23 and 24. Claim 25 is withdrawn.

Therefore, the claims in the case are 1 and 3-22. All stand rejected.

Appeal is from the rejection of claims 1 and 3-22.

Claim 1 is the only independent claim on appeal.

(4) STATUS OF AMENDMENTS

No claim amendment was filed subsequent to the final rejection.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

The invention is a safety enhancing device for a freestanding candle; that is, a candle not confined in the safety of a container or candle holder¹. The candle itself is a conventional fuel body 12² that has a bottom surface 13, an outer peripheral surface 11 and a central wick 10. The invention includes a flame resistant sheet 14³ attached to the bottom surface 13 of the freestanding candle. The flame resistant sheet extends outwardly at least substantially an inch from the axis of the wick⁴ and may extend all the way to the peripheral surface⁵. An upright wick support 16, holding the lower end of the wick 10, is attached to the flame resistant sheet 14⁶ in proximity to the lower end of the wick 10⁷. The attachment of the wick support 16 to the sheet 14 prevents the wick support 16 from moving sideways or falling over⁸ if the candle burns down so far that the wax fuel melts and liquifies all the way to the bottom of the candle. The attachment also forms a barrier preventing molten wax from flowing under the wick holder and up the wick and thereby prevents any fuel supply to the wick⁹ from wax below the top of the wick support. The latter feature is intended to extinguish the flame when the candle burns down to just below the top of the wick support by starving the wick of any fuel supply before the wick burns down all the way to the bottom of the candle. However, the

¹ Page 2, [0003], line 15

² Page 9, [0043], line 14

³ Page 9, [0043], line 16

⁴ Page 10, [0045], line 5

⁵ Page 10, [0046], line 11

⁶ Page 12, [0050], lines 6-14

⁷ Page 12, [0050], lines 4

⁸ Page 9, [0051], lines 18-26

⁹ Page 10, [0047], line 22 to page 13, [0052], line 2

latter feature of starving the flame with a barrier to fuel entry at the bottom of the wick holder is the subject of a previously issued patent to applicant, which is now the reference applied in this appealed application by the examiner. Importantly, however, this patent reference does not show a wick support attached to a plate or sheet jointed to the bottom of a freestanding candle.

The manner the invention functions to accomplish its purpose is important to the issue of obviousness presented by this appeal. The general purpose of the invention is to provide some safety protection to consumers who fail to do what they are supposed to do. Some consumers seem unaware of, or ignore, the fact that, when a candle burns all the way down to near its bottom, there can be several, severely dangerous consequences if the candle is setting upon a flammable surface, such as a wooden table top. The molten pool of wax, which surrounds the wick below the flame, can melt through a bottom of a freestanding candle and flow onto its support surface. This can leave the wick still burning with the wick lying in a molten wax pool and on a wooden surface. The out-flowing molten wax can also carry particles, such as match tips, with it out onto the wooden surface where they act as secondary wicks, burning while lying in the wax and on the wooden surface. Because of these hazards, freestanding candles should be burned only when placed on a heat resistant, non-flammable surface, such as a dish or plate, or on a non-flammable candleholder. But some consumers do not do so. Of course this is not a problem with a container candle.

The flame resistant sheet of the invention improves the probability that these dangerous consequences will not cause a fire. This is especially true if the wick support is attached to the sheet. The reason the flame resistant sheet is joined to the bottom surface of the candle is so that it will stay with the candle, unlike a plate or dish. The flame resistant

sheet can prevent a subsurface fire by providing both a barrier to fuel, usually molten wax, and an ignition barrier; that is, it separates the candle flame from the surface beneath it. During testing by the inventor, it was not uncommon to see a scorched subsurface that did not burn because nowhere at the surface was there the combination of fuel, oxygen and ignition source.

The principal reason that the wick support is attached to the flame resistant sheet is to prevent a wick support with a short flaming wick from falling over or moving sideways with flowing molten wax if the candle melts all the way down to its bottom. If the wick support falls over, the entire remaining length of the wick can lay upon the molten wax causing an increased supply of liquid wax fuel that enlarges the flame. If the wick support moves sideways, it can move off the flame resistant sheet and onto an underlying wooden support surface.

The reason the flame resistant sheet extends out at least an inch is so that it extends out as far as applicant believes the molten pool is most likely to leak through and covers the area where a flaming wick is most likely to settle if the wick bends over while the wick support remains in position. The wax in a candle typically melts below the flame down to an arcuate, frusto-spherical interface between the liquid wax and the solid wax. Consequently, the center of the candle bottom is usually the first part to be subject to having the molten wax leak onto the supporting surface.

The manner in which the invention functions is to resist causing a fire if the flame does not extinguish by starving its fuel supply while the remaining wax fuel is still sufficiently thick that the candle is still solid at its bottom surface. In other words, the invention becomes a safety feature if and when the candle has melted down so far that the

bottom surface of the candle has melted. The feature of the appealed invention comes into play if the fuel supply barrier concept, described above and in the Pappas reference, fails to starve the flame of fuel and extinguish the flame when the top of the wax falls just below the top of the wick support.

Preferably, and the subject of claim 4, the flame resistant sheet 14 has an adhesive backing to facilitate adhesively joining the flame resistant sheet 14 to both the bottom surface 13 of the fuel body 12 and to the wick support 16¹⁰. This adhesive backing facilitates joining the sheet 14 to the freestanding candle, lowering production costs, and the adhesive backing allows immediate attachment not only to the candle bottom, but also to the wick support to seal it to hold it in place and also to form a liquid fuel barrier. Consequently, all attachment and sealing can be accomplished in one simple step.

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 and 4 were rejected under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,842,850 to Pappas (cited by applicant in an IDS and also the inventor in this appeal). More specifically, the issue is whether a person of ordinary skill in the art would have had the motivation or made the analysis suggested by the examiner from the prior art alone, or whether the motivation and analysis attributed to the skilled worker by the examiner, was guided by applicant's teachings in the application that is the subject of this appeal.

¹⁰ Page 12, [0050], line 10

(7) ARGUMENT

Claim 1

The examiner rejected claim 1, saying that the Pappas reference, in its Fig. 13, shows all the features of claim 1, except the examiner acknowledges that, in Fig. 13, the wick holder 116 is attached to a pedestal 112 instead of to the “plate/sheet” 114. The examiner concedes that the pedestal 112 is not considered part of the plate/sheet 114. The examiner asserts, however, that Pappas teaches that the pedestal of the Pappas reference is one mechanism for raising the wick above the fuel to starve the candle of fuel and thereby extinguish the flame and that a taller wick support is another mechanism taught by the Pappas reference for doing so. From that the examiner concludes that it would have been obvious to the skilled worker to modify the Fig. 13 embodiment of the reference by eliminating the pedestal, substituting a taller wick support and attaching that wick support to a sheet with no pedestal.

That modification would not have been obvious to the skilled worker having reference to Pappas or any other prior art. Instead it is a modification guided by applicant's teachings and applicant's claim 1. First, none of the freestanding candle embodiments illustrated in the Pappas reference have a plate or sheet attached to the bottom of the candle, except Figs. 13 and 14. Neither of those has a wick support attached to the plate. In Fig. 13 the wick support is attached to a pedestal and not the plate/sheet (as the examiner acknowledges). In Fig. 14 the wick support is plainly not attached to the sheet, but rather is above the sheet separated from it by an empty cavity. There is no reason apparent from the Pappas reference to remove the pedestal of Fig. 13 but keep the rest of the plate part 114 and to move the wick support down and attach it to the plate 114. Similarly, there is no reason

apparent from the Pappas reference to eliminate the cavity of Fig. 14 and move the wick support down and attach it to the plate 138.

The examiner says that the skilled worker reading Pappas would be motivated to eliminate the pedestal and attach the wick support to the remaining plate of Fig. 13 by an intention to create an equivalent. He reasons that Pappas indicates that a taller wick holder accomplishes the same function as the pedestal so elimination of the pedestal and attachment of the wick holder to the plate would be obvious. However, the plate 114 is there in Fig. 13 for the purpose of holding the pedestal in place. The Pappas reference [column 5, lines 43-59] describes Fig. 13 as a way to use a pedestal with a freestanding candle. The pedestal is described as integral with the plate. The Pappas reference describes how the integral plate and pedestal can be placed in a mold prior to pouring in the wax. It is obvious to a person skilled in the candle making art that, if the pedestal were not attached to a plate, the molten wax flowing into the candle mold would be likely to displace the pedestal from a central position. A skilled person who wanted to use a taller wick support instead of a pedestal would not modify the Fig. 13 structure to do so. That person would do what the Pappas reference itself shows for a freestanding candle. That person would do what is shown in Figs. 9 and 10 of the Pappas reference. No plate would be used if the tall wick support were used because a plate would not be needed. It can fairly be said that the examiner's proposed modification of Fig. 13 is contrary to the teaching of the Pappas reference because Pappas teaches, in Figs. 9 and 10, how to use the taller wick support in a freestanding candle and that use is without the bottom plate.

The examiner reasons that the embodiment of Pappas Fig. 14 has a floor 138 that is equivalent to the plate 114 of the Fig. 13 embodiment and they each serve to prevent molten

fuel from flowing out from under the candle. However, the Pappas reference does not say that the plate 114 of Fig. 13 prevents molten fuel from flowing out from under the candle. The Pappas reference teaches the contrary. Pappas even says [column 5, lines 50-52] that the plate can be a combustible material such as wax. Obviously, if it is wax, it was not intended to prevent molten fuel flow out from the bottom of the candle. At column 5, lines 25-37, Pappas does recognize the potential problem of molten wax leaking out the bottom of a candle, but Pappas teaches that the way to avoid that leakage is to use the high sustainer (wick support) which leaves an approximately ½ inch thick layer of wax which is “unmelted” to prevent flow out the bottom. Consequently, the Pappas reference teaches that, when the high wick holder of the Pappas reference is used, the plate is unnecessary. The unmelted layer prevents flow out the bottom. That is why no plate is needed for the Pappas invention when the high wick holder is used.

Although the Pappas Fig. 13 and 14 embodiments may be equivalent with respect to the invention described in the Pappas reference because they both raise the top of the wick holder, they are not equivalent with respect to the appealed invention and they do teach or motivate the modification that the examiner urges is obvious. The embodiment of Fig. 14 extinguishes the candle by a different mechanism or operating mode (see column 5, line 61 to column 6, line 8) than the Fig. 13 embodiment. In the Fig. 14 embodiment, molten wax flows into a cavity 132, the wick support and the wick fall with it into the cavity and the flame is drowned out. The bottom plate 138 in Fig. 14 is there because, with this embodiment having a cavity, there will be molten wax at the bottom. But that plate is only needed in Fig. 14 because the cavity is there and intended to be filled with molten wax. Where there is no cavity, the plate is not needed. From the Pappas reference there is no bottom leakage

problem, unless there is a cavity with a wick support positioned above it, because Pappas prevents leakage by extinguishing the flame before the flame melts the wax down far enough that the bottom can leak.

Though properly not mentioned by the examiner, the container candle embodiments of Figs. 1-6 show the wick support attached to the bottom segment of the surrounding container. But that does not teach (which the examiner did not assert) eliminating the sides of the container and leaving only its bottom. The container makes applicant's invention in this appeal superfluous. The invention is not needed if there is a container because the container would retain any molten wax at the candle bottom if the candle burns down that far.

Another reason a skilled worker would not modify the Pappas reference, in the manner asserted by the examiner, is that the Pappas reference and the invention of this application operate in two entirely different modes of operation to accomplish two entirely different purposes. The operating mode of the invention in this appeal would not have been known to the skilled worker viewing only the prior art and therefore he or she would not have been motivated to make the examiner's modification. A skilled worker considering the Pappas reference would be guided in any modifications only by the principles of the Pappas manner of operating.

The invention of the Pappas reference teaches the principle and operating mode of (1) sealing the wick holder so that molten wax can not pass under the bottom of the wick holder and flow upwardly through the wick to support flame combustion, combined with (2) raising the top end of the wick holder far enough above the bottom of the candle so that the flame is extinguished when there is still a substantial layer of wax candle fuel at the bottom of the

candle. In other words, the Pappas reference seeks to extinguish the flame before the candle burns down too far.

The invention of this appeal seeks to prevent leakage from the bottom of a freestanding candle (it's not a problem with a container candle) if the candle does burn down so far that, absent applicant's flame resistant sheet, the molten wax can leak through the bottom. In other words, if the sealed wick support does not extinguish the freestanding candle in the way taught by the Pappas reference, then the invention of this appeal can become effective.

The only reason to modify the Pappas reference in the manner described by the examiner is to make it function in the way taught by the applicant in the appealed patent application. That reason or motivation is not taught or obvious from the Pappas reference. It is only described in the appealed application.

Of course the best of all worlds is to combine both modes of operation. But just because applicant's invention additionally uses the fuel starving principles of the Pappas reference does not make obvious the mode of operation or the structural combination taught in the appealed application. Most importantly, Pappas does not teach the modification urged by the examiner. The allowability of applicant's claim 1 is not based upon the structural features that seal the bottom of the wick support to starve the fuel flow to the wick and extinguish the flame when the molten fuel surface falls just below the top of the wick support. The allowability of claim 1 is based upon the combination of (1) the plate joined to the bottom of a freestanding candle that prevents leakage through the bottom of a freestanding candle and (2) attachment of the wick support to that plate so the wick support and its wick will stay upright and in position if the fuel starving feature does not work. The

prior art does not show or motivate attaching a wick support to a plate and attaching that plate to the bottom of a freestanding candle.

The Pappas reference does not recognize the problem which the appealed invention seeks to solve. That problem is: what if a freestanding candle burns all the way to the bottom and does not extinguish and leave a layer of unmelted wax. The Pappas reference suggests no solution to that problem. It is only after the problem is explained and the solution is described in the appealed application that the invention becomes obvious from the Pappas reference combined with the appealed application. There is no reason or motivation from the Pappas reference alone to remove the pedestal from the Fig. 13 embodiment of the Pappas reference and move the wick support down and directly attach it to a flat plate or sheet that is joined to the candle.

Claim 4

Claim 4 is directed to the further limitation that the flame-resistant sheet has an adhesive backing that bonds to both the wick support and the bottom surface of the candle. In other words, the sheet is already provided with an adhesive back surface when it is applied. The examiner rejected this claim saying that, while the Pappas reference does not specify in what manner the plate 114 is joined or mounted to the candle 110, the person of ordinary skill in the art would recognize that adhesives are a known means of attachment in the candle art (“such as those attaching plug 24 to its support”) and it would be simply a matter of obvious design choice to select an adhesive for joining/mounting the plate 114 to the candle pictured in Fig. 13.

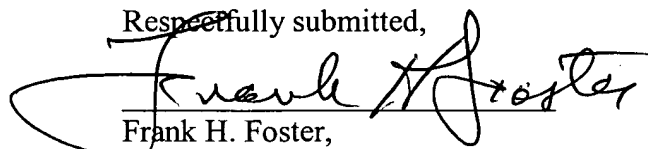
Applicant concedes that adhesives are one of the most common ways of joining two things together. Applicant also concedes that the attachment of labels to candles with adhesive is known in the prior art. Such labels even have an adhesive backing. However, that does not make it obvious to use a sheet with an adhesive backing for joining the functional structures of applicant's invention. The examiner concedes that the Pappas reference does not teach the manner of attaching the plate 114 with the pedestal 112 to the candle of its Fig. 13. The advantage of the adhesive backing is its ease of application and the fact that, with the adhesive backing, it will simultaneously attach not only to the candle bottom, but also to the wick support and seal it.

CONCLUSION

Therefore, applicant respectfully submits that the modification of Pappas urged by the examiner would not have been obvious to the person of ordinary skill in the art from the prior art and therefore the examiner should be reversed and the claims allowed.

The Commissioner is authorized to charge Deposit Account No. 13-3393 for any insufficient fees under 37 CFR §§ 1.16 or 1.17, or credit any overpayment of fees.

9/28/05
Date of Signature

Respectfully submitted,

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Our File No.: LUM 180

Enclosures: 2 Copies of Applicant's Brief with Claims Appendix
Transmittal Form
Fee Transmittal Form
Check in the amount of \$250.00

CERTIFICATE OF MAILING

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4/28/05
Date of Signature

Frank H. Foster
Frank H. Foster

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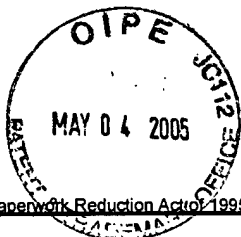
Attorney File No. : LUM 180
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For : Flame-Resistant Sheet With Candle Wick Support

(8) CLAIMS APPENDIX

- 1 1. A freestanding candle, in an operable position having a wick supported by a fuel body
2 along a longitudinal wick axis and extending upwardly from a top surface of the fuel body,
3 the candle comprising:
4 (a) a flame-resistant, substantially flat sheet joined to the bottom surface of the fuel
5 body in proximity to a lower end of the wick and extending outwardly at least
6 substantially one inch from the longitudinal axis of the wick; and
7 (b) an upright wick support attached to the sheet and holding the lower end of the
8 wick, the attached support forming a liquid fuel flow barrier separating the lower end
9 of the wick from the fuel body
10 wherein the candle is not contained within a container whereby the sheet prevents the leakage
11 of melted candle wax through the bottom of the candle onto a candle support surface.
- 1 2. **(canceled)**
- 1 3. The candle of claim 1, wherein the wick support is sealingly bonded to the sheet.
- 1 4. The candle of claim 3, wherein the sheet has an adhesive backing that bonds to the wick
2 support and the bottom surface of the fuel body.

- 1 5. The candle of claim 1, wherein the flow barrier is a sealant disposed at least across an
2 opening to a bore extending through the wick support.
- 1 6. The candle of claim 1, wherein the wick support is formed *in situ* unitarily with the wick.
- 1 7. The candle of claim 6, wherein the wick support is a solid, flame-resistant agent disposed
2 on a surface of the lower end of the wick.
- 1 8. The candle of claim 6, wherein the wick support is a solid, flame-resistant agent
2 impregnating the lower end of the wick.
- 1 9. The candle of claim 7 or 8, wherein the wick support is bonded to the sheet by the flame-
2 resistant agent.
- 1 10. The candle of claim 1, wherein the wick support is a block of solid, flame-resistant
2 material.
- 1 11. The candle of claim 1, wherein the wick support extends above the sheet an amount
2 sufficient to prevent a candle fire.
- 1 12. The candle of claim 11, wherein the amount sufficient to prevent a candle fire is at least
2 about one-half inch.
- 1 13. The candle of claim 1, wherein the sheet extends substantially to an outer peripheral
2 surface of the fuel body.
- 1 14. The candle of claim 1, wherein the sheet has a peripheral rim having a thickness greater
2 than the sheet.
- 1 15. The candle of claim 1, wherein the sheet has a flange at an outer boundary.

- 1 16. The candle of claim 1, wherein the sheet is imbedded within the fuel body.
- 1 17. The candle of claim 1, wherein the sheet is adhered to the bottom surface of the fuel
2 body.
- 1 18. The candle of claim 1, wherein the sheet is corrugated.
- 1 19. The candle of claim 1, wherein the sheet is dome-shaped.
- 1 20. The candle of claim 1, wherein the fuel body has multiple wicks.
- 1 21. The candle of claim 20, wherein each flame-resistant sheet in proximity to each wick
2 extends at least one inch from the longitudinal axis of each wick.
- 1 22. The candle of claim 1, wherein the wick support is crimped.
- 1 23. **(canceled)**
- 1 24. **(canceled)**
- 1 25. **(withdrawn)** A method for more safely burning a freestanding candle fuel body that is not
2 supported in a surrounding container, the method comprising:
- 3 (a) bonding a flame-resistant sheet to the bottom surface of the fuel body in proximity
4 to a lower end of the wick and extending outwardly at least substantially one inch from
5 the longitudinal axis of the wick; and
- 6 (b) burning the fuel body on a support surface which does not have a container
7 surrounding the fuel body.



JPW
HJF

PTO/SB/21 (03-03)

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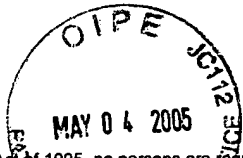
TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/966,413	
	Filing Date	09/28/2001	
	First Named Inventor	George G. Pappas	
	Art Unit	3743	
	Examiner Name	Josiah C. Cocks	
Total Number of Pages in This Submission	53	Attorney Docket Number	LUM 180

ENCLOSURES (Check all that apply)		
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PTO/SB/17 (12-04v2)

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FEE TRANSMITTAL

For FY 2005

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 250.00

Complete if Known

Application Number	09/966,413
Filing Date	09/28/2001
First Named Inventor	George G. Pappas
Examiner Name	Josiah C. Cocks
Art Unit	3743
Attorney Docket No.	LUM 180

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☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEESFee Description

Each claim over 20 (including Reissues)

Each independent claim over 3 (including Reissues)

Multiple dependent claims

Fee (\$)	Small Entity Fee (\$)
50	25
200	100
360	180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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- 20 or HP = _____ x _____ = _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
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- 3 or HP = _____ x _____ = _____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
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3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
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- 100 = _____ / 50 = _____ (round up to a whole number) x _____ = _____

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Brief in support of appeal

Fees Paid (\$)

250.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 24,560	Telephone 614/575-2100
Name (Print/Type)	Frank H. Foster		Date 4/29/2005

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